

Claims

1. A fire retardant intumescent coating composition comprising:

- (a) 30 to 60% by weight of a phosphorous containing material which decomposes to produce phosphoric acid when the coating is exposed to fire;
- (b) 10 to 30% by weight of a thermosetting binder;
- (c) 2.5 to 10% by weight of a curing agent for the thermosetting binder; and
- (d) 5 to 40% by weight of a thermoplastic binder,

wherein the active groups of the thermosetting and thermoplastic binders are chosen so as to impart charring and blowing functions to the intumescent coating composition.

2. A fire retardant intumescent coating composition according to claim 1 wherein the binder system accounts for 30% or more by weight of the composition.
3. A fire retardant intumescent coating composition according to claim 1 or claim 2 wherein the phosphorous containing material is a sodium, potassium or ammonium polyphosphate.
4. A fire retardant intumescent coating composition according to any one of the preceding claims wherein the thermosetting binder is a hydroxylated thermosetting resin.
5. A fire retardant intumescent coating composition according to claim 4 wherein the thermosetting resin is an epoxy resin.
6. A fire retardant intumescent coating composition according to any one of the preceding claims wherein the curing agent for the thermosetting binder is a phenolic curing agent.

7. A fire retardant intumescent coating composition according to any one of the preceding claims wherein the thermoplastic resin is an oxygenated heterocyclic thermoplastic resin.
8. A fire retardant intumescent composition according to claim 7 wherein the thermoplastic resin is an aldehyde or ketone resin.
9. A fire retardant intumescent coating composition according to any one of the preceding claims containing 0.1 to 10% by weight of a melt viscosity modifier.
10. A fire retardant intumescent coating composition according to claim 9 wherein the melt viscosity modifier is hydrogenated castor oil.
11. A fire retardant intumescent coating composition according to any one of the preceding claims containing 1 to 10% by weight of a colouring agent.
12. A fire retardant intumescent coating composition according to claim 11 wherein the colouring agent is titanium dioxide.
13. A fire retardant intumescent coating composition according to any one of the preceding claims containing one or more additives selected from the group consisting of a china clay, melamine phosphate, vitrifiers, metal salts and melamine.
14. A fire retardant intumescent coating comprising the following components:
 - (a) 30 to 60% by weight of a phosphorous containing material which decomposes to produce phosphoric acid when the coating is exposed to fire;
 - (b) 10 to 30% by weight of a thermosetting binder;
 - (c) 2.5 to 10% by weight of a curing agent for the thermosetting binder;
 - (d) 5 to 40% by weight of a thermoplastic binder;
 - (e) 0 to 10% by weight of a melt viscosity modifier; and
 - (f) 0 to 10% by weight of a colouring agent

in which (a)-(f) must always add up to 100% by weight and wherein the active groups of the thermosetting and thermoplastic binders are chosen so as to impart charring and blowing function to the intumescent coating composition.

15. A fire retardant intumescent coating composition according to claim 14 wherein the thermosetting resin is a hydroxylated thermosetting resin.
16. A fire retardant intumescent coating composition according to claim 15 wherein the thermosetting resin is an epoxy resin.
17. A fire retardant intumescent coating composition according to any one of claims 14 to 16 wherein the thermoplastic resin is an oxygenated heterocyclic thermoplastic resin.
18. A fire retardant intumescent coating composition according to claim 17 wherein the thermoplastic resin is an aldehyde or ketone resin.
19. A fire retardant intumescent coating composition substantially as hereinbefore described with reference to the Examples.